Name:

at1113exam: Expand, factor, and solve quadratics (v327)

1. Expand the following expression into standard form.

$$(9x + 7)(9x - 7)$$

$81x^2 - 63x + 63x - 49$

$81x^2 - 49$

2. Expand the following expression into standard form.

$$(7x + 6)^2$$

$49x^2 + 42x + 42x + 36$

$49x^2 + 84x + 36$

3. Solve the equation.

$$(9x + 8)(5x + 7) = 0$$

$x = \frac{-8}{9}$ $x = \frac{-7}{5}$

4. Expand the following expression into standard form.

$$(2x + 5)(7x - 9)$$

$14x^2 - 18x + 35x - 45$

$14x^2 + 17x - 45$

5. Solve the equation.

$$7x^2 - 4x - 1 \;=\; 2x^2 - 5x + 3$$

$$5x^2 + x - 4 = 0$$
$$(5x - 4)(x + 1) = 0$$
$$x = \frac{4}{5} \qquad x = -1$$

6. Solve the equation with factoring by grouping.

$$12x^2 + 8x + 15x + 10 \;=\; 0$$

$$(4x + 5)(3x + 2) = 0$$
$$x = \frac{-5}{4} \qquad x = \frac{-2}{3}$$

7. Factor the expression.

$$81x^2 - 64$$

$$(9x + 8)(9x - 8)$$

8. Factor the expression.

$$x^2 + x - 56$$

$$(x + 8)(x - 7)$$